Priority Sheets

Lake Warner / Mill River Watershed Surveys
November 2002

Problems Found	Natural Resources and Assets Found	Priorities for Action
Section 1 - Mill River from dam to Conn. River, *Glenn Clark, Tom & Sandy Clark* 1. Road runoff possibly 2. Invasive species along lower half of Mill River Section 3. Trash along banks	1. Wildlife habitat 2. Banks fairly well stabilized with vegetation	
Section 2 & 3 – Lake Warner, *Jim Freeman, Ginger Goldsbury, Jim & Gerry Harvey* 1. Study stormdrains – are there ways of delaying and buffering storm runoff from River Dr, Lake Warner Rd, and Stockbridge / Knightly. 2. Leaf dumps from some residents and town of Hadley (ballfield in N Hadley).	1. A variety of wildlife is found on and around the lake. There is a good variety of habitat ranging from brush, to meadow & marsh. 2. It's a lovely lake for kayaking and some fishing.	1. Road runoff 2. Storm sewers
Section 4 – 1st Tributary from the north, Knightly Rd, Comins Rd, Meadow St, *Micki L. Sanderson* 1. Culvert on Knightly has no buffer allowing salt and silt to be deposited in stream.	1. Excellent preventative measures taken by John Devine and J. Zgrodnick and area farmers.	1. Buffer zone and barrier around culvert.
Section 5 - Mill River upstream from Lake Warner, 2nd trib, Maple St, Mt. Warner Rd, Plainville, *Tom & Sandy Clark* 1.	1. Excellent wildlife habitat through large part of section – good diversity 2. Significant vegetated buffer	

Section 6&7 – Breckinridge Rd, Huntington Rd, Cemeteries, *Jerry Schoen, Marie-Francoise Walk* 1. Horse farm drains to stream – little to no buffer, animals w/ access to stream, bare earth, manure w/ easy drainage to stream. 2. Cemetery – brush, dirt, waste "hill" with steep slope, adjacent to headwaters of a stream (no flowing water, but there is some approx 150 yds "downstream") 3. House / street construction – erosion potential high. 4. Rt 116 – pot runoff to stream that runs thru horse farm.	1. Nice wetlands. Great birding opportunities	1. BMPS on horse farm. 2. BMPs on construction site.
Section 8 – "Fish & Wildlife Brook," Rte 116, North side of Route 9, *Jerry Schoen, Marie-Francoise Walk* 1. Stop&Shop parking lot drainage to wetland. Little to no border. Oil w water below drain. 2. Similar Pkg lot / wetland drainage w/ oil sheen on water at CVS. 3. Some bare earth at border of S&S parking lot - -vegetation needed? 4. Remove old silt fences from behind S&S lot – at the communication tower. Also from Frontage Rd near post office. 5. Pipe & roof drains ? Discharge near wetland at nursing home. 6. Silt fence poorly constructed / missing from parking lot behind Telecomm bld ? Drain to wetland or detention basin? 7. Peastone parking lot behind Telecomm apparently a wetland violation. 8. Condos off amity – lush lawns drain directly to wetland.	1. Lots of wetland. Probably significant pollution filter effect & good wildlife habitat.	1. Alert Concom about parking lot and wetland. 2. Check vegetation (spring) at border of S&S Parking lot 3. Remove old silt fences at S & S parking lot 4. BMPs at S& S Parking lot. 5. CVS 6. Outreach – ed to condo owners ✍ avoid fertilizer on that slope.

Section 9 – Headwaters of "Fish & Wildlife Brook," South side of Route 9, *Dave Ziomek* 1. Development on/around Westgate Drive has increased impervious surfaces and run-off to tributaries of Mill River 2. Plans for additional commercial/residential development in the area will only add to run-off problems 3. Some agricultural run-off entering system south of Norwattuck Rail Trail 4. Area includes significant amount of very compromised wetlands full of invasive species 5. Extensive use of road salt on Rt. 9, Rt. 116 and adjacent roads may impact the Mill River	1. FWS has its regional office on Westgate Drive—possibility for education and outreach 2. There are many interested vernal pools and isolated wetlands in the area 3. Possibilities exist for Hadley/Amherst partnership to address issues of water quantity and qauality	1. Assess carrying capacity (H2O quantity/quality) of Mill River tributary running north under Rt. 9 2. Explore working with area businesses/Hadley Cons. Commission to use more retention basins to off-set run-off from area roadways and parking lots
Section 10 – South half of UMass Campus, Downtown Amherst, *JP and Meagan Kwiecinski* 1. Discolored water draining from UMass trap rock parking lot into wetlands west of Alumni Stadium. 2. Potential problems off Pleasant and Fearing. 3. Algae on rocks south of McClennan Street.	1. Jogging trail along wetlands west of Alumni Stadium. 2. Residential Area – runoff from gutters go into yards for the most part.	1. Determine runoff from stadium is a problem for wetlands area. 2. Keep an eye on stream between Pleasant Street and Fearing Street to see if debris from storage shed and from dumpster enters stream. 3. Review to see any changes in extent of algae. 4. Examine storm drain runoff in spring to see if any oil is detected from extensive parking lots off University Drive and Massachusetts Avenue. 5. Review university practices for keeping green area around Alumni Stadium.

Section 11 North half of UMass campus, *MCWW student volunteers* 1. Pipe draining into River from Campus Pond 2. Silt barrier still up near Puffton. Seems like it could be removed w/out causing a problem 3. Puffton dump located near the river.	1. Good fish & wildlife hiding spots in river (exposed banks w/ roots exposed) 2. Open wetland 3. We saw deer tracks 4. Thick vegetation on both sides.	1. Campus pond & drainage pipe 2. Puffton dump (located behind apartments 280 – 285)
Section 12 - Amherst Schools, residential areas, *Nate Frye* 1. Erosion, obvious runoff problem from highly trafficked road. No vegetation downstream of culvert. 2. Runoff into campus road.	1. Most of the tributaries in residential to slightly urban areas, yet with good buffers - for the most part - in place. 2. Eastern watershed boundary on top of ridge – steep gradient with lots of impervious surface – but an obvious attempt to "filter" drainage with vegetation ; steepest area "preserved" in cross country trail section by Eastman.	1. Vegetation buffer to for banks along tributary – especially by road. 2. More vegetation on pond – maybe silt fences or other measures as well.
Section 13 – Stockbridge Rd, Roosevelt St area, *Jim & Gerry Harvey* 1. Most land in Section 13 is cultivated farmland including horses & cows. Potential runoff from fertilizer, pesticides, & animal waste. 2. Active roadways pass through land – MA Rte 116, Roosevelt & Stockbridge – not clear where storm sewers drain to. At intersection of N Maple, Roosevelt & Mass Ave had 3 direct drains to wetlands.	1. At least 2 access routes to fishing in Lake Warner / tributaries (Mill St behind homes on Stockbridge) 2. Mt. Warner visible from entire area 3. Migration path for several species.	1. Determine disposal destination of storm sewers 2. Determine if runoff from organic material handled adequately.

Section 14: *Dave Ziomek* 1. There is significant erosion on the main stem of the Mill River 2. Cattle still graze near/in the Mill River and its tributaries 3. Many acres of farmland are unprotected and at risk for development 4. Storm water management is an issue in North Amherst 5. In/around North Amherst there is almost no vegetated buffer along the main stem 6. Agricultural run-off remains an issue	1. Area includes extensive agricultural lands north of Cumins Rd 2. Many acres of farmland have been perm. protected through the APR Program 3. The Podick and Cartherine Cole Wildlife Sanctuaries are in this focus area 4. The area provide excellent habitat for many species of wildlife	1. Address issue of livestock in/near river 2. Assess run-off issues in North Amherst center 3. Assess possibilities for additional land conservation issues in Section 14

Lake Warner Watershed Action Plan

RECOMMENDATIONS FOR ACTION

Based on the November 2002 Watershed Survey of the Lake Warner Watershed
and the December 2002 Action Planning Meeting, Facilitated by the Riverways Program

A. REPORTING

1. To Hadley Parks & Recreation

Section 2 – North Hadley Ballfield – Town has been dumping leaves and lawn waste directly in water. Request appropriate composting methods and location be chosen.

2. To Planning Board & Conservation Commission

Section 6 & 7 - Report lack of erosion controls at subdivision on MT Warner Rd Street

3. Agriculture

Section 6 & 7 - UMass Horse Farm – Collaborate with farm operators on use of best management practices to address issues including livestock in the water, lack of erosion controls, runoff issues.

4. To Conservation Commission

Report runoff from Telcomm building on University Drive: parking lot & concerns regarding the adjacent wetlands. Gravel parking lot appears to be located too close to wetlands.
Report old silt fence at Stop & Shop parking lot that needs to be removed.

5. UMass Campus & Surroundings

Section 11 - Puffton Village (private housing with large student population) - Report trash dump
Section 11 – Whitmore Adminstration building – Runoff problems from nearby construction

B. SHORT TERM

1. Departments of Public Works

Coordinate with Department of Public Work to improve stormwater management.

- Section 1 –BMP needed for currently untreated road runoff to Mill River downstream of the Lake Warner dam.
- Section 2 – Seek ways to improve infiltration/ buffering of stormwater from catch basins along Stockbridge Road, River Drive, Mount Warner Road, and from River Drive bridge below the dam.
- Section 4 – Improve stormwater management, repair culvert at Knightly Road crossing of tributary. Current lack of vegetation, erosion problems, culvert in poor repair.

Before seeking grant money, revisit these sites with DPW staff and 1) Prioritize problems 2) identify BMPs which might work on the problems. Then research grant money to fund construction of structural Best Management Practices at chosen problem areas.

2. Water Quality Monitoring

Develop water quality monitoring program throughout the watershed on tributaries. Specific trouble spots recommended for monitoring include:

- Section 4 – Knightly Road crossing of tributary. Parameter: nutrients
- Section 6 & 7 – UMass Horse Farm. Parameters: nutrients, bacteria
- Section 8 – Stop & Shop parking lots' stormwater outlet to adjacent wetland, CVS Parking lot stormwater outlet– Parameters: Volatile Organic Compounds (VOCs) metals, TSS, nutrients
- Under Rocky Hill Rd – south of stadium VOCs, Nutrients
- Section 10 – Tannery Brook from McClellan Street. Parameters: Nutrients, VOCs?, bacteria, macroinvertebrates.
- Inlet to L. Warner: Nutrients, bacteria. VOCs Lake Sediment: Metals.

3. Agriculture

Work cooperatively with farmers in the watershed to seek remedies to address nonpoint source pollution sources from local farms through paths that reduce impacts and support farmers' ability to finance and construct viable best management practices. Partner with farmers, Natural Resources Conservation Service, Hampshire Conservation District, MA Department of Food and Agriculture, and local municipalities.

- Section 6 & 7 –UMass Horse Farm – Work with operators on issues including livestock in the water, lack of erosion controls, runoff issues. *See similar language above.*
- Section 13 & 14 – Several farms in section 13, farmland near auction site in section 14 - Communicate with farmers with erosion problems, runoff issues, and on concerns regarding livestock being watered in streams. Explore management options, grant money.

4. Commercial Concerns

Several local businesses have been identified as having poor stormwater management from parking facilities, while others serve as good examples. Work with business owners to promote examples of good stormwater management, and plan upgrades on failing stormwater systems where feasible. Include efforts as part of greater outreach campaign to elevate visibility of the lake in town. Specific problem areas identified include:

Section 8 – Route 9 Issues, talk to businesses about stormwater management – Stop & Shop, CVS Outreach campaign might also point out examples of good stormwater management – e.g Big Y.

5. Best Management Practices (BMPs)

Work with municipal, campus, business and other partners to plan development of Best Management Practices to abate stormwater pollution.

- Section 6 & 7 – UMass Horse Farm – Install BMPs to address runoff problem, employ alternatives to practice of watering livestock directly from stream.
- Section 8 – Stop & Shop & CVS – Install BMPs that effectively buffer stormwater and allow proper infiltration.
- Section 11 - UMass Campus – Work to reduce impacts of runoff from unpaved parking lots south of the stadium
- Inquire w/ UMass about athletic fields maintenance practices (fertilizers, pesticides, runoff concerns).
- Section 12 – Eastman Lane – stream crossing has erosion problems, bare earth, no vegetation. Plant vegetation at road crossing and downstream along tributary.
- UMass Campus Pond - Plant vegetation on shoreline to discourage Canada geese from using the area. Include outreach campaign targeted to students, residents, visitors who feed the ducks & geese.
- Stormwater Bylaws for Hadley & Amherst – Push for town bylaws governing stormwater management to protect receiving waters.

6. Education / Outreach

Plan and develop education and outreach programs to elevate the visibility of the Mill River and Lake Warner among residents of watershed communities. Focus on nonpoint source pollution reduction, stormwater concerns, impacts to tributary streams – overall what residents and businesses can do to improve the health of Mill River and Lake Warner. Suggested topics include:

- Section 8 – Condominium Complex – Very lush lawns adjacent to water – provide information on the value of vegetated buffer and environmentally friendly lawn care practices.
- Link Tannery Brook headwaters (marsh) to neighboring Amherst & Wildwood schools – promote school activities that concern water quality of the marsh.
- UMass – Confer on issues in section 10 – stormwater problems relating to campus catch basin systems, parking lot runoff. Also campus pond mgt. see above.
- Homeowners – The importance of vegetated buffer as pollutant buffers, habitat, etc.

C. LONG TERM

1. Invasive upland plants

Invasive upland plants have colonized several locations in the watershed. Work to eradicate existing invasives and prevent new infestations. Grant money is available through the Natural Resources Conservation Service's (NRCS) Wildlife Habitat Incentives Program (WHIP) and other sources.

- Surveyors found invasive plants in sections 1 and 5, as well as along Route 9.
- Section 9 - Work with Hadley Conservation Commission, partner with US Fish & Wildlife to mitigate impact to tributary. Invasives (phragmites) could be kickoff effort.
- Resurvey in summer to see if purple loosetrife is present.

2. Land Protection Status – natural streams and irrigation ditches

Many natural streams have been channelized in agricultural lands for irrigation. The level of protection afforded to land along these streams may be affected by whether the Conservation Commission regards the waterway as more of a stream or more of a ditch.

3. Sediment issue – campus pond

4. Work to improve Lake Warner's water quality and protect it from greater impairments.

- Investigate dredging sediments of Lake Warner.
- Raise the visibility of the lake and Mill River through education and improvement projects.
- Implement this action plan.
- Investigate in-lake management options.